REMARKS

Claims 38-61 are pending in this application. By this Amendment, claims 38 and 51 are amended to correct minor informalities.

For the following reasons, Applicant respectfully requests reconsideration and withdrawal of all of the rejections outstanding in the August 22, 2006 Office Action.

35 U.S.C. § 102(b) Rejection Based on Striebich

In the Office Action, the Examiner rejectes claims 51-53 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,590,766 to Striebich. Applicant respectfully disagrees with this rejection.

Striebich discloses a drive unit 1 comprising an internal combustion engine 2 and a waste heat turbine unit 3. The waste heat turbine unit 3 utilizes the energy contents of the exhaust gases from the internal combustion engine 2 to generate power. The power generated in the waste heat turbine unit 3 is supplied to the crankshaft 8 of the internal combustion 2 through gearing mechanisms 9, 10.

As is apparent, however, a driving shaft of the waste heat turbine unit 3 is not "mechanically coupled to an electrical converter," as recited in claim 51. For at least this reason, Striebich does not anticipate claim 51. Striebich also does not anticipate claims 52 and 53 for the same reason that it does not anticipate claim 51.

35 U.S.C. § 103(a) Rejection Based on Striebich and Abdelmalek

Claims 38-50 and 54-58 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Striebich in view of U.S. Patent No. 5,327,987 to Abdelmalek. Applicant disagrees with this rejection.

Independent claim 38 is directed to an auxiliary power unit configured to be coupled to a torque bearing element of a primary power unit. The power unit comprises an expander wheel

comprising a drive shaft and a plurality of blades, an injection nozzle for injecting a condensable fluid towards the plurality of blades, and a clutch system configured to selectively couple the drive shaft to the torque bearing element. The power unit also comprises a control system configured to control the clutch system to selectively couple the drive shaft to the torque bearing element.

Independent claim 54 is directed to a method of providing auxiliary power to a primary power unit. The method comprises injecting a condensable fluid towards a plurality of blades of an expander wheel to rotate a drive shaft of the expander wheel and selectively coupling the drive shaft to a torque bearing element of the primary power unit. The method further comprises controlling the selective coupling of the drive shaft and the torque bearing element with a control system.

In the rejection, the Examiner acknowledges that "Striebich ... does not disclose a control unit for controlling the engagement of the clutch in response to the speeds of the auxiliary unit and the engine." Nonetheless, relying on Abdelmalet, the Examiner alleges that "it's well known to have a controller 117 in a hybrid engine to control the clutch 101a, 102a, in response to the speeds of an auxiliary unit (electric motor 102) and the main engine (vehicle speed) (note column 6, lines 10-60)." The Examiner then alleges that "[i]t would have been obvious ... to provide a control unit and speed sensor in Striebich as taught by Abdelmalek for the purpose of controlling the clutch to drive the vehicle more efficiently." Applicant respectfully disagrees with the Examiner's allegations.

First of all, the Examiner appears to have misinterpreted the claimed subject matter of the present invention. For example, although the Examiner acknowledges that Striebich does not disclose "a control unit for controlling the engagement of the clutch in response to the speeds of the auxiliary unit and the engine," none of the claims in the present application recites that feature. Instead, claim 38 recites "a control system configured to control the clutch system to

selectively couple the drive shaft to the torque bearing element," and claim 54 recites a method of "controlling the selective coupling of the drive shaft and the torque bearing element with a control system."

Moreover, even if Applicant had claimed that feature, one of ordinary skill in the art would not have been motivated to use a control system to control engagement between the internal combustion engine 2 and the waste heat turbine unit 3, because employing a control system in the system of Striebich is completely useless. For example, Striebich uses a freewheel clutch to directly transmit rotational energy of the waste heat turbine unit 3 to the crankshaft 8 of the internal combustion engine 2. A freewheel clutch, however, as is well-known in the art, does not require a separate control mechanism to control its engagement because it automatically engages and disengages depending on its rotational speed. For example, a freewheel clutch engages with a driven shaft when its rotational speed exceeds a predetermined level and disengages when its rotational speed falls below a predetermined level. Thus, where a freewheel clutch is used, a separate control system is not needed to control engagement of the freewheel clutch. Therefore, one of ordinary skill in the art considering Striebich would not have been motivated to modify its teachings to employ a control system to control the engagement of the freewheel clutch of Striebich, as alleged by the Examiner.

For at least these reasons, independent claims 38 and 54, and their respective dependent claims, patentably distinguish from the alleged combination of Striebich and Abdelmalet. Thus, reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection based on Striebich and Abdelmalet is respectfully requested.

Double Patenting Rejection

Claims 37-61 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of U.S. Patent No. 6,374,613 ("Patent I") or U.S. Patent No. 6,729,137 ("Patent II"). Applicant respectfully disagrees.

A rejection under the doctrine of obviousness-type double patenting is appropriate only when a claim in an application is not patentably distinct (i.e., merely an obvious variation) from the subject matter claimed in a commonly owned patent. See M.P.E.P. § 804.

In this case, the double patenting rejection is improper because the claims in this application define a subject matter that is patentably distinct from the invention defined in claims of the above-mentioned patents. For example, the claims of Patent I define a miniaturized waste heat engine and related method for recovering waste energy from a heat source and converting the waste energy into usueable energy. Similarly, the claims of Patent II define a energy converting system and related method for converting heat energy from a heat source. Patentably distinct from the inventions defined in Patents I and II, the claims of the present application define an auxiliary power unit and related method for coupling to a torque bearing element of a primary power unit. Since the subject matter claimed in the present application is patentably distinct from the inventions defined in Patents I and II, this double patenting rejection is improper. For at least this reason, the rejection of claims 37-61 under the doctrine of obviousness-type double patenting should be withdrawn.

In view of the foregoing amendments and remarks, Applicant respectfully submits that all of the pending claims are in condition for allowance.

Respectfully submitted,

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By: _____
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